Serial No. 09/423,356

IN THE SPECIFICATION:

Page 6, line 20 to Page 7, line 2, cancel and replace with:

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Further, according to the invention described in aspect 2, in the transmission apparatus described in aspect 1, a standard television signal is used as the transmission signal in the forward path from the master station to the slave station; and a PCM audio signal and the information indicating the address of the slave station and the reception frequency specified by the self-station are superposed on a video signal during the vertical blanking period of the video signal.

Page 7, lines 7-19, cancel and replace with:

Further, the invention described in aspect 3 comprises a transmitter having an RF converter which generates a standard television signal; a receiver having an RF tuner which receives the standard television signal; available frequency detection means for detecting frequencies which can be used for video transmission, within the reception band of the RF tuner, in advance of use; detected frequency registration means for registering the detected frequencies, as a communication frequency list, in both of the

transmitter and the receiver; and spread spectrum communication means for spreading the power spectrum by changing the frequency within the range of the communication frequency list, and performing spread spectrum communication.

Page 8, lines 2-8, cancel and replace with:

Further, according to the invention of aspect 4, the transmission apparatus described in aspect 3 includes transmission power control means for automatically changing the transmission power during the communication in accordance with the use frequency band width so as to keep the power density per unit band width constant.

Page 8, lines 17-21, cancel and replace with:

Further, according to the invention described in aspect 5, the transmission apparatus described in aspects 3 or 4 includes frequency changing means for changing the frequency during the communication, in synchronization with the synchronous timing of the video signal.

Page 8, lines 5-9, cancel and replace with:

Further, according to the invention described in aspect 6, the transmission apparatus described in any of aspects 3 to 5 includes control signal superposition and transmission means for transmitting a control signal by superposing it on the video signal in the blanking period, during the communication.

Page 9, lines 18-23, cancel and replace with:

Further, according to the invention described in aspect 7, the transmission apparatus described in any of aspects 3 to 6 includes audio signal superposition and transmission means for subjecting an audio signal to PCM, and transmitting the PCM audio signal by superposing it on the video signal in the blanking period, during the communication.

Page 10, lines 7-21, cancel and replace with:

Further, the invention described in aspect 8 comprises first and second transmission/reception apparatuses each comprising a transmission apparatus described in any of aspects 3 to 7; frequency changing order control means for controlling the

frequency changing order, during the communication, in such a manner that the frequency is changed in one direction, from the higher frequency to the lower frequency or from the lower frequency to the higher frequency, within the range of the communication frequency list, and when the frequency reaches the end of the frequency list, it is returned to the beginning of the frequency list; and communication control means for controlling the first and second transmission/reception apparatuses to realize duplex communication, by using a frequency time table in which the first and second transmission/reception apparatuses always use different frequencies.

Page 10, line 25 to Page 11, line 9, cancel and replace with:

Further, according to the invention described in aspect 9, the transmission apparatus described in aspect 8 includes communication frequency list update means which uses the previously registered communication frequency list when starting the communication, and uses a second communication frequency list obtained by duplicating the communication frequency list after the communication has been started, and updates the second communication frequency list as

desired by exchanging the result of communication, i.e., whether it is good or bad, between the first and second transmission/reception apparatuses.

Page 11, lines 13-20, cancel and replace with:

Further, according to the invention described in aspect 10, the transmission apparatus described in any of aspects 3 to 9 includes ID storage means for storing an identification number (hereinafter referred to as an ID) which is given to the transmission apparatus during manufacture; and ID inquiry and registration means for performing mutual inquiry of IDs with another transmission apparatus which is permitted to have communication in advance of use, and registering the ID.

Page 11, line 25 to Page 12, line 13, cancel and replace with:

Further, according to the invention described in aspect 11, the transmission apparatus described in aspect 10 includes frequency setting means which always executes the reception mode in advance of the transmission mode to detect the frequency time tables of all other transmission apparatuses which are performing

transmission within the same wave area, and performs transmission by using a frequency time table the use frequency of which is always different from those of these other transmission apparatuses; and retransmission means for performing retransmission by using a frequency time table different from the frequency time table when a transmission signal from another apparatus which has requested communication cannot be detected even when a predetermined period of time has passed after starting the transmission mode.

Page 12, lines 18-22, cancel and replace with:

Further, according to the invention described in aspect 12, the transmission apparatus described in aspects 10 or 11 includes output stop means for stopping output of the original information such as audio or video, when the ID which is permitted to have communication cannot be confirmed in the reception mode.

Page 13, lines 2-22, cancel and replace with:

Further, the invention described in aspect 13 is a transmission method for mutually transmitting video or audio

between a master station and a slave station by utilizing a minute-power wave. In this method, a relay station is placed between the master station and the slave station which are placed apart from each other by a distance longer than the reachable range of the minute-power wave; a transmission signal from the master station includes, in addition to original information such as video or audio, information indicating the address of the slave station, and information indicating a frequency at which the self-station receives a signal from the relay station; the relay station modulates the frequency of the minute-power wave received from the master station to a different frequency and outputs it; the relay station transmits information about a frequency at which the self-station receives a signal from the slave station; and when the slave station recognizes that the transmission signal is a signal directed to the self-station, it modulates the minute-power wave to the frequency specified by the relay station and transmits the video or audio, thereby establishing a transmission path between the master station and the slave station.

Page 14, lines 2-9, cancel and replace with:

Further, according to the invention described in aspect 14, in the transmission method described in aspect 13, a standard television signal is used as the transmission signal in the forward path from the master station to the slave station; and a PCM audio signal and the information indicating the destination station and the reception frequency specified by the self-station are superposed on a video signal during the vertical blanking period of the video signal.

Page 14, lines 14-25, cancel and replace with:

Further, the invention described in aspect 15 is a transmission method for performing transmission between a transmitter having an RF converter which generates a standard television signal, and a receiver having an RF tuner which receives the standard television signal. In this method, in advance of use, frequencies which can be used for video transmission are detected within the reception band of the RF tuner; the detected frequencies are registered, as a communication frequency list, in both of the transmitter and the receiver; and the power spectrum is spread by

changing the frequency within the range of the communication frequency list, thereby performing spread spectrum communication.

Page 15, lines 9-13, cancel and replace with:

Further, according to the invention described in aspect 16, in the transmission method described in aspect 15, the transmission power during the communication is automatically changed in accordance with the use frequency band width so as to keep the power density per unit band width constant.

Page 15, lines 22-25, cancel and replace with:

Further, according to the invention described in aspect 17, in the transmission method described in aspects 15 or 16, the frequency during the communication is changed in synchronization with the synchronous timing of the video signal.

Page 16, lines 9-12, cancel and replace with:

Further, according to the invention described in aspect 18, in the transmission method described in any of aspects 15 to 17,

during the communication, a control signal is transmitted by superposing it on the video signal in the blanking period.

Page 16, lines 21-25, cancel and replace with:

Further, according to the invention described in aspect 19, in the transmission method described in any of aspects 15 to 18, during the communication, an audio signal is subjected to PCM, and the PCM audio signal is transmitted by superposing it on the video signal in the blanking period.

Page 17, lines 9-23, cancel and replace with:

Further, the invention described in aspect 20 is a transmission method, wherein each of first and second transmission/reception apparatuses performs a transmission method described in any of aspects 15 to 19; during the communication, the frequency changing order is controlled in such a manner that the frequency is changed in one direction, from the higher frequency to the lower frequency or from the lower frequency to the higher frequency, within the range of the communication frequency list, and when the frequency reaches the end of the frequency list, it is

returned to the beginning of the frequency list; and the first and second transmission/reception apparatuses are controlled to realize duplex communication, by using a frequency time table in which the first and second transmission/reception apparatuses always use different frequencies.

Page 18, lines 2-10, cancel and replace with:

Further, according to the invention described in aspect 21, in the transmission method described in aspect 20, the previously registered communication frequency list is used when starting the communication and, after the communication has been started, a second communication frequency list obtained by duplicating the communication frequency list is used, and the second communication frequency list is updated as desired by exchanging the result of communication, i.e., whether it is good or bad, between the first and second transmission/reception apparatuses.

Page 18, lines 14-20, cancel and replace with:

Further, according to the invention described in aspect 22, in the transmission method described in any of aspects 15 to 21, an

identification number (hereinafter referred to as an ID) given to the transmission apparatus during manufacture is stored; and in advance of use, mutual inquiry of IDs is performed with another transmission apparatus which is permitted to have communication, and the ID is registered.

Page 18, line 25 to Page 19, line 12, cancel and replace with:

Further, according to the invention described in aspect 23, in the transmission method described in aspect 22, the reception mode is always performed in advance of the transmission mode to detect the frequency time tables of all other transmission apparatuses which are performing transmission within the same wave area, and transmission is performed by using a frequency time table the use frequency of which is always different from those of these other transmission apparatuses; and when a transmission signal from another apparatus which has requested communication cannot be detected even when a predetermined period of time has passed after starting the transmission mode, retransmission is performed by using a frequency time table different from the frequency time table.

Page 19, lines 17-21, cancel and replace with:

Further, according to the invention described in aspect 24, in the transmission method described in aspects 22 or 23, when the ID which is permitted to have communication cannot be confirmed in the reception mode, the original information such as audio or video is not output.

Page 21, lines 19-21, cancel and replace with:

This first embodiment corresponds to the inventions which are described in aspects 1 and 2 and aspects 13 and 14 of this application.

Page 30, lines 18-21, cancel and replace with:

Hereinafter, the second embodiment of the invention will be described by using figures 4, 6, 7, 8, and 9 and table 1. This second embodiment corresponds to the inventions described in aspects 3 to 7 and aspects 15 to 19 of this application.

Page 33, line 17 to Page 35, line 15, cancel and replace with:

Further, numeral 500 denotes an available frequency detection means described in aspect 3. This available frequency detection means 500 detects frequencies which can be used for video transmission within the reception band of the RF tuner, in advance of use, and this means is composed of the RF tuner 118, the control circuit 123, the storage circuit 124, the comparator 126, and the detection button 133.

Further, numeral 501 denotes a frequency registration means described in aspect 3. This frequency registration means 501 registers the detected frequencies as a communication frequency list in both of the transmission and receiving apparatuses, and this means is composed of the communication terminals 103 and 119, the control circuits 107 and 123, the storage circuits 108 and 124, and the registration button 116.

Further, numeral 502 denotes a spread spectrum communication means described in aspect 3. This spread spectrum communication means 502 spreads the power spectrum by rapidly changing the frequency within the range of the communication frequency list, and this means is composed of the control circuits 107 and 123, the

storage circuits 108 and 124, the RF converter 102, and the RF tuner 118.

Further, numeral 503 denotes a transmission power control means described in aspect 4. This transmission power control means 503 automatically changes the transmission power according to the use frequency band width so as to keep the power density per unit band width constant, and this means is composed of the control circuit 107, the storage circuit 108, and the variable attenuator 114.

Further, numeral 504 denotes a frequency changing means described in aspect 5. This frequency changing means 504 changes the frequency at the synchronous timing of video signal, and this means is composed of the video input terminal 106, the comparators 110 and 126, and the control circuits 107 and 123.

Further, numeral 505 denotes a control signal superposition and transmission means described in aspect 6. This control signal superposition and transmission means 505 superposes the control signal on the video signal in the blanking period and transmits the video signal, and this means is composed of the external apparatus

connecting terminals 104 and 120, the control circuits 107 and 123, the comparators 110 and 126, and the compositor 112.

Further, numeral 506 denotes an audio signal superposition and transmission means described in aspect 7. This audio signal superposition and transmission means 506 subjects the audio signal to PCM, superposes the audio signal on the video signal in the blanking period, and transmits the video signal. This means is composed of the audio input terminal 105, the output terminal 122, the AD converter 109, the DA converter 125, the control circuits 107 and 123, the comparators 110 and 126, the compositor 112, and the audio changing switch 127.

Page 46, lines 10-12, cancel and replace with:

This third embodiment corresponds to the inventions described in aspects 8 and 9 and aspects 20 and 21 of this application.

Page 49, line 4 to Page 50, line 10, cancel and replace with:

In figure 5, 201A and 201B denote a first transmission/ reception apparatus and a second transmission/reception apparatus which are described in aspect 8, respectively.

Further, 510 denotes a frequency changing order control means described in aspect 8. This frequency changing order control means 510 controls the frequency changing order so that the frequency is changed in one direction from the higher frequency to the lower frequency or from the lower frequency to the higher frequency, within the range of the communication frequency list and, when reaching the end of the frequency list, the frequency is returned to the beginning of the frequency list. This means 510 is composed of the control circuit 211A and the storage circuit 212A.

Further, 511 denotes a communication control means described in aspect 8. This communication control means 511 controls communication so that duplex, i.e., bidirectional, communication is carried out, by using a frequency time table in which the first and second transmission/reception apparatuses always use different frequencies. This means 511 is composed of the control circuit 211A and the storage circuit 212A.

Further, 512 denotes a communication frequency list update means described in aspect 9. This communication frequency list update means 512 uses the registered communication frequency list when starting communication and, after the communication has once

started, it uses a second communication frequency list which is obtained by duplicating the communication frequency list. The second communication frequency list is used for exchanging information about the result of communication, i.e., good or bad, between the two pieces of transmission/reception apparatuses. This means 512 is composed of the control circuit 211A, the storage circuit 212A, the comparators 214A and 225A, and the compositor 216A.

Page 66, lines 19-20, cancel and replace with:

This fourth embodiment corresponds to the inventions described in aspects 10 to 12 and aspects 22 to 24 of this application.

Page 67, line 14 to Page 69, line 3, cancel and replace with:

In figure 5, 520 denotes an ID storage means described in aspect 10. This ID storage means 520 stores IDs which are given during manufacture, and this means is composed of the communication terminals 207A and 207B, the control circuits 211A and 211B, and the storage circuits 212A and 212B.

Further, 521 denotes an ID inquiry/registration means described in aspect 10. This ID inquiry/registration means 521 is used for mutual inquiry of IDs with another apparatus which is permitted to have communication, and registration of the ID, in advance of use. This means is composed of the detection/ registration buttons 206A and 206B, the communication terminals 207A and 207B, the control circuits 211A and 211B, and the storage circuits 212A and 212B.

Further, 522 denotes a frequency setting means described in aspect 11. This frequency setting means 522 always executes the reception mode before the transmission mode, and detects the frequency time tables of all apparatuses which are performing transmission within the same wave area, and performs transmission by using a frequency time table in which the use frequencies are always different from those of these other apparatuses. This means is composed of the RF tuners 203A and 203B, the comparators 225A and 225B, the control circuits 211A and 211B, and the storage circuits 212A and 212B.

Further, 523 denotes a retransmission means described in aspect 11. After the transmission mode is executed, if a

transmission signal from the apparatus which has requested communication cannot be detected even when a predetermined period of time has passed, this retransmission means 523 performs transmission again by using a frequency time table different from the above-described frequency time table. This means is composed of the transmission/reception antennae 219A and 219B, the RF tuners 203A and 203B, the comparators 225A and 225B, the control circuits 211A and 211B, and the storage circuits 212A and 212B.

Further, 524 denotes an output stop means described in aspect 12. This output stop means 524 stops output of audio and video when the ID to be permitted to have communication cannot be confirmed in the reception mode. This means is composed of the control circuits 211A and 211B, the comparators 225A and 225B, the storage circuits 212A and 212B, and the audio video output circuits 227A and 227B.

Page 83, line 1 to Page 91, line 25, cancel and replace with:

According to a transmission apparatus of aspect 1, a relay station is provided between a master station and a slave station which transmit video or audio by utilizing a minute-power wave, a

transmission signal from the master station includes information indicating the address of the slave station and a frequency at which the self-station receives a signal from the relay station, the relay station modulates the frequency of the wave received from the master station to a different frequency and outputs it, and the slave station recognizes that the transmission signal is a signal directed to the self-station and then modulates the minute-power wave to the frequency specified by the relay station, thereby establishing a transmission path between the master station and the slave station. Therefore, this apparatus enables transmission in the case where the distance between the master station and the slave station exceeds the reachable range of the minute-power wave.

According to a transmission apparatus of aspect 2, in the transmission apparatus of aspect 1, a standard television signal is used as the transmission signal in the forward path from the master station to the slave station, and a PCM audio signal and the information indicating the address of the slave station and the reception frequency specified by the self-station are superposed on a video signal during the vertical blanking period of the video signal. Therefore, this apparatus enables transmission in the case

where the distance between the master station and the slave station exceeds the reachable range of the minute-power wave. Further, when the standard television signal is used as the transmission signal, the PCM audio signal and the information indicating the address of the slave station and the reception frequency specified by the self-station can be superposed to the transmission signal.

According to a transmission apparatus of aspect 3, this transmission apparatus is provided with a transmitter having an RF converter which generates a standard television signal and a receiver having an RF tuner which receives the standard television signal, frequencies which can be used for video transmission are detected within the reception band of the RF tuner in advance of use, the detected frequencies are registered in both of the transmitter and the receiver, and the power spectrum is spread by changing the frequency within the range of the communication frequency list to perform spread spectrum communication. Therefore, it is possible to obtain a transmission apparatus which reduces the influence of multi-path.

According to a transmission apparatus of aspect 4, in the transmission apparatus of aspect 3, the transmission power is automatically changed in accordance with the use frequency band width so as to keep the power density per unit band width constant. Therefore, this apparatus enables transmission at a minute-power wave level which does not interfere with reception of an existing radio communication apparatus.

According to a transmission apparatus of aspect 5, in the transmission apparatus of aspect 3 or 4, the frequency during the communication is changed in synchronization with the synchronous timing of the video signal. Therefore, disordering of the video signal due to the frequency change can be reduced, resulting in video transmission with improved image quality.

According to a transmission apparatus of aspect 6, in the transmission apparatus according to any of aspects 3 to 5, a control signal is transmitted by superposing it on the video signal in the blanking period. Therefore, it is possible to control the operation of the receiving apparatus from the transmission apparatus.

According to a transmission apparatus of aspect 7, in the transmission apparatus according to any of aspects 3 to 6, an audio signal is subjected to PCM, and the PCM audio signal is transmitted by superposing it on the video signal in the blanking period. Therefore, noise in the audio signal due to the frequency change is removed, resulting in transmission with improved sound quality.

According to a transmission apparatus of aspect 8, first and second transmission/reception apparatuses are constructed by using the transmission apparatus according to any of aspects 3 to 8, and the frequency is changed within the communication frequency list, from the higher frequency to the lower frequency or in the reverse order, by using different frequency time tables for the first and second transmission/reception apparatuses. Therefore, mutual control is realized between the respective transmission/reception apparatuses.

According to a transmission apparatus of aspect 9, in the transmission apparatus of aspect 8, the previously registered communication frequency list is used when starting the communication and, after communication has been started, a second communication frequency list which is obtained by duplicating the

registered communication frequency list is desirably updated according to the information as to whether the communication is good or bad. Therefore, the influence of multi-path is solved.

According to a transmission apparatus of aspect 10, in the transmission apparatus according to any of aspects 3 to 9, an ID which is given to the apparatus during manufacture is stored, and mutual inquiry of IDs is performed with another transmission apparatus which is permitted to have communication in advance of use, and then the ID is registered. Therefore, radio interference between the transmission apparatuses is avoided.

According to a transmission apparatus of aspect 11, in the transmission apparatus of aspect 10, the reception mode is executed in advance of the transmission mode to detect the frequency time tables of all other transmission apparatuses which are performing transmission within the same wave area, and transmission is performed by using a frequency time table the use frequency of which is always different from those of these other transmission apparatuses. When a transmission signal from another apparatus which has requested communication cannot be detected even when a predetermined period of time has passed after starting the

transmission mode, retransmission is performed by using a frequency time table different from the frequency time table which has been used. Therefore, radio interference between the transmission apparatuses is avoided.

According to a transmission apparatus of aspect 12, in the transmission apparatus of aspect 10 or 11, when the ID which is permitted to have communication cannot be confirmed in the reception mode, output of audio or video is stopped. Therefore, interception is avoided.

According to a transmission method of aspect 13, a relay station is provided between a master station and a slave station which transmit video or audio by utilizing a minute-power wave, a transmission signal from the master station includes information indicating the address of the slave station and a frequency at which the self-station receives a signal from the relay station, the relay station modulates the frequency of the wave received from the master station to a different frequency and outputs it, and the slave station recognizes that the transmission signal is a signal directed to the self-station and then modulates the minute-power wave to the frequency specified by the relay station, thereby

establishing a transmission path between the master station and the slave station. Therefore, this method enables transmission in the case where the distance between the master station and the slave station exceeds the reachable range of the minute-power wave.

According to a transmission method of aspect 14, in the transmission method of aspect 13, a standard television signal is used as the transmission signal in the forward path from the master station to the slave station, and a PCM audio signal and the information indicating the address of the slave station and the reception frequency specified by the self-station are superposed on a video signal during the vertical blanking period of the video signal. Therefore, this method enables transmission in the case where the distance between the master station and the slave station exceeds the reachable range of the minute-power wave. Further, when the standard television signal is used as the transmission signal, the PCM audio signal and the information indicating the address of the slave station and the reception frequency specified by the self-station can be superposed o the transmission signal.

According to a transmission method of aspect 15, this method uses a transmitter having an RF converter which generates a

standard television signal and a receiver having an RF tuner which receives the standard television signal, frequencies which can be used for video transmission are detected within the reception band of the RF tuner in advance of use, the detected frequencies are registered in both of the transmitter and the receiver, and the power spectrum is spread by changing the frequency within the range of the communication frequency list to perform spread spectrum communication. Therefore, it is possible to obtain a transmission method which reduces the influence of multi-path.

According to a transmission method of aspect 16, in the transmission method of aspect 15, the transmission power is automatically changed in accordance with the use frequency band width so as to keep the power density per unit band width constant. Therefore, this method enables transmission at a minute-power wave level which does not interfere with reception of an existing radio communication apparatus.

According to a transmission apparatus of aspect 17, in the transmission method of aspect 15 or 16, the frequency during the communication is changed in synchronization with the synchronous timing of the video signal. Therefore, disordering of the video

signal due to the frequency change can be reduced, resulting in video transmission with improved image quality.

According to a transmission method of aspect 18, in the transmission method according to any of aspects 15 to 17, a control signal is transmitted by superposing it on the video signal in the blanking period. Therefore, it is possible to control the operation of the receiving apparatus from the transmission apparatus.

According to a transmission method of aspect 19, in the transmission method according to any of aspects 15 to 18, an audio signal is subjected to PCM, and the PCM audio signal is transmitted by superposing it on the video signal in the blanking period. Therefore, noise in the audio signal due to the frequency change is removed, resulting in transmission with improved sound quality.

According to a transmission method of aspect 20, first and second transmission/reception apparatuses each performing the transmission method according to any of aspects 15 to 19 are provided, and the frequency is changed within the communication frequency list, from the higher frequency to the lower frequency or in the reverse order, by using different frequency time tables for

the first and second transmission/reception apparatuses. Therefore, mutual control is realized between the respective transmission/reception apparatuses.

According to a transmission method of aspect 21, in the transmission method of aspect 20, the previously registered communication frequency list is used when starting the communication and, after communication has been started, a second communication frequency list which is obtained by duplicating the registered communication frequency list is desirably updated according to the information as to whether the communication is good or bad. Therefore, the influence of multi-path is solved.

According to a transmission method of aspect 22, in the transmission method according to any of aspects 15 to 21, an ID which is given to the apparatus during manufacture is stored, and mutual inquiry of IDs is performed with another transmission apparatus which is permitted to have communication in advance of use, and then the ID is registered. Therefore, radio interference between the transmission apparatuses is avoided.

According to a transmission method of aspect 23, in the transmission method of aspect 22, the reception mode is executed in